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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,433	12/12/2003	Robert D. Peters	GEMS8081.191	1432
27061	7590	11/08/2005	EXAMINER	
ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (GEMS)			FETZNER, TIFFANY A	
14135 NORTH CEDARBURG ROAD			ART UNIT	
MEQUON, WI 53097			PAPER NUMBER	
			2859	

DATE MAILED: 11/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Advisory Action  
Before the Filing of an Appeal Brief**

Application No.

10/707,433

Applicant(s)

PETERS, ROBERT D.

Examiner

Tiffany A. Fetzner

Art Unit

2859

**--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

THE REPLY FILED 20 October 2005 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☐ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☒ The period for reply expires 6 months from the mailing date of the final rejection.  
b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**NOTICE OF APPEAL**

2. ☐ The Notice of Appeal was filed on \_\_\_\_\_. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

**AMENDMENTS**

3. ☒ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because  
(a) ☒ They raise new issues that would require further consideration and/or search (see NOTE below);  
(b) ☐ They raise the issue of new matter (see NOTE below);  
(c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or  
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_. (See 37 CFR 1.116 and 41.33(a)).

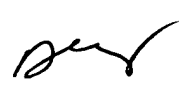
4. ☒ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).  
5. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.  
6. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).  
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☒ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.  
The status of the claim(s) is (or will be) as follows:  
Claim(s) allowed: \_\_\_\_\_.  
Claim(s) objected to: \_\_\_\_\_.  
Claim(s) rejected: 1-14, 16-26  
Claim(s) withdrawn from consideration: 15 Canceled

**AFFIDAVIT OR OTHER EVIDENCE**

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).  
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).  
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

**REQUEST FOR RECONSIDERATION/OTHER**

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because:  
See Continuation Sheet.  
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08 or PTO-1449) Paper No(s). \_\_\_\_\_.  
13. ☒ Other: See Continuation Sheet.

  
**Diego Gutierrez**  
Supervisory Patent Examiner  
Technology Center 2800

Continuation of 11. does NOT place the application in condition for allowance because: The claims fails to required that the "entire" FSE sequence, (i.e. see claim 1, the first limitation) be performed prior to any of the amplitude modulation effect corrections being performed. Claim 1 as recited broadly includes acquiring k-space data from multiple echoes in an echo train with a fast spin-echo pulse sequence;" The second limitation states "correcting the acquired k-space data for amplitude modulation effects in the fast spin echo pulse sequence:" The examiner notes that these limitations include a scope in which the acquisition of the k-space data comprises acquiring a first k-space data point, from the first applied echo in the Multi-echo FSE sequence, subsequently correcting the first acquired k-space data point; acquiring a second k-space data point from the second applied echo in the Multi-echo FSE sequence, and subsequently correcting the second point of acquired k-space data; with the process continuing while the FSE sequence is ongoing; because applicant has failed to recite that the "entire" fast spin echo (FSE) multiple echo, echo train is performed before any of the acquired k-space data is corrected. The addition / amending of the applicant's method to include the correction of k-space data after the entire FSE sequence is acquired, would also be a change in scope, of the finally rejected claims of September 28<sup>th</sup> 2005, which would further necessitate an updated search of the prior art by the examiner, and raise another new issues. The response of October 20<sup>th</sup> 2005 has been marked do not enter by the examiner., and fails to list claim 11. The examiner considers claim 11 to start in line 3 of claim 10.

Applicant argues that the invention is entirely a post processing; (i.e. after FSE execution) correction process to the k-space data, which occurs only aafter the FSE sequence is completed, and before the third limitation of claim 1 where the step of "2D FOurier transforming the corrected k-space data to form an image space from which an image is reconstructed." is taught. However because there is nothing in Claim 1 to require that the "entire" FSE sequence is executed, before any correction is performed on the k-space data, applicant's argument is not persuasive. Additionally the examiner notes that in the October 20<sup>th</sup> 2005 response on page 8 paragraph 2 applicant specifically states that in stabilizing the echo amplitudes the Le Roux article varies in FSE sequences "the value of the nutation angle of each refocusing pulse of a pulse sequence used to acquire k-space data." The examiner notes that "stabilizing the echo amplitudes" is equivalent to bringing all of the multiple echo amplitudes to the same value, as quickly as possible so that modulation of the amplitudes from one echo to another, (i.e. the change in detected amplitude from one mutipe echo signal to another) is minimized, or effectively zeroed. In the LeRoux article this process occurs while the FSE sequence is being performed, (i.e. the correction of the detected k-space data, is peformed by controlling the nutation angles of the excitaton pulses of the FSE sequence from one pulse to the next while the FSE sequence is being performed.) The first echo is acquired, with a first k-space amplitude and then based on the amplitude acquired, the second excitation / nutation pulse is varied, which intrinsically corrects the k-space amplitude data of the second echo in the muti-echo FSE sequence. Therefore the LeRoux article does correct "acquired k-space data for amplitude mdulation effects in an FSE acquisition", contrary to the remakrs on page 8 paragraph 2 of the October 20<sup>th</sup> 2005 response.

Additionally, the controlling / stabilizing of the detected amplitude by Leroux article is also a controlling / stabilizing of the detected gain, since magnitude is just the absolute value of the amplitude, therefore the ability to combine the LeRoux article, with the Sandford et al., article is suggested from the Leroux article, because stabilizing the amplitude detected, which minimizes the receiver detection bandwidth needed is also a stabilization of the gain, which minimizes any potential hazards of having to accout for a wide detectable bandwidth covering the amplitude range. Therefore the examiner is not persuaded that there is no reason to combine these references under 103, based on the teachings of the references themselves.

The examiner also notes that the term "k-space" is not a direct synonym for "MR data" therefore The final office action of September 28<sup>th</sup> 2005 was proper since the replacement of "MR data" with "k-space data" was a change in scope of the claims. The examiner notes that the term "k-space data" and "MR data" occur in the specification originally filed, but it was not a new matter issue that was raised, it was a change in scope issue, because the two terms are not directly equivalent synonyms, they mean different things. MR data is a superset of k-space data. (i.e. k-space is a matrix of data prior to a Fourier Transformation) MR data is Magnetic Resonance detected data, regardless of whether or not a Fourier Transform has been performed, and while an arrangement of MR data, before a Fourier Transform is considered to be in "k-space", and MR data after Fourier transformation is considered to be arranged in "image space". The term "k-space" does not equivocate to MR data, because any matrix arrangement of data, of any type of signal prior to a Fourier Transformation is technically in "k-space", and representative of "k-space" data, regardless of what type of signal data, the k-space data represents.

Continuation of 13. Other: Applicant's claim 11 is considered to start in line 3 of claim 10 on page 3 of the October 20th 2005 response, which appears to be the start of another claim, since claim 11 is not listed in the 10/20/2005 response, and page 4 starts with claim 12 .